

## PATENT COOPERATION TREATY

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## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
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in its capacity as elected Office

Date of mailing (day/month/year) 20 April 2000 (20.04.00)	
International application No. PCT/US99/20926	Applicant's or agent's file reference CM2011/MH
International filing date (day/month/year) 07 September 1999 (07.09.99)	Priority date (day/month/year) 07 September 1998 (07.09.98)
Applicant CORZANI, Italo et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:16 March 2000 (16.03.00)☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>7</sup> :</b> <b>D06M 10/02, C23C 16/30</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 00/14323</b> <b>(43) International Publication Date:</b> 16 March 2000 (16.03.00)
<b>(21) International Application Number:</b> PCT/US99/20926 <b>(22) International Filing Date:</b> 7 September 1999 (07.09.99) <b>(30) Priority Data:</b> 98116895.8 7 September 1998 (07.09.98) EP <b>(71) Applicant (for all designated States except US):</b> THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> CORZANI, Italo [IT/IT]; Via Fontevicchia, 40, I-66100 Chieti (IT). DATTA, Saswati [US/US]; 11636 Plumhill Lane, Cincinnati, OH 45249 (US). FRANCE, Paul, Amaat, Raymond, Gerard [BE/US]; 8375 Todd Creek Circle, West Chester, OH 45069 (US). MARCHESINI, Maurizio [IT/IT]; Via Danubio, 9, I-65010 Spoltore (IT). PALUMBO, Gianfranco [DE/DE]; Georgenfeld 7, D-61348 Bad Homburg (DE). D'AGOSTINO, Riccardo [IT/IT]; Via Orabona, 4, I-70126 Bari (IT). FAVIA, Pietro [IT/IT]; Via Orabona, 4, I-70126 Bari (IT). LAMENDOLA, Ritalba [IT/IT]; Via Orabona, 4, I-70126 Bari (IT). RADOMYSELSKIY, Arseniy Valerevich [UA/US]; 1031 Delta Avenue 31, Cincinnati, OH 45208 (US). SCHONE,		Rainier, Walter, Max [DE/DE]; Rombergweg 15, D-61462 Konigstein/Ts. (DE). <b>(74) Agents:</b> REED, T., David et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217-1087 (US). <b>(81) Designated States:</b> AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), DM, EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KR (Utility model), KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). <b>Published</b> <i>With international search report.          Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
<b>(54) Title:</b> TEXTILE ARTICLES OR CLOTHING HAVING SUPER HYDROPHOBIC COATING		
<b>(57) Abstract</b> <p>The present invention relates to textile articles and clothing such as outdoor garments, indoor garments exposed to aqueous liquid, swim wear, leather, hats, textile sun roofs for cars, sun blinds or awnings which have at least part of their surface provided with super hydrophobicity.</p>		

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# INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US 99/20926

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 D06M10/02 C23C16/30

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 D06M C23C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 632 842 A (KARWOSKI THEODORE ET AL) 30 December 1986 (1986-12-30) column 3, line 3 - line 18; examples 1,2 column 12, line 1 - line 24 ----	1-4
X	EP 0 508 136 A (MATSUSHITA ELECTRIC IND CO LTD) 14 October 1992 (1992-10-14) examples 1,3,4 ----	1,4,6,7
A	US 5 164 252 A (MECKEL WALTER ET AL) 17 November 1992 (1992-11-17) column 4, line 3 - line 9 -----	1,6



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

### \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance  
 "E" earlier document but published on or after the international filing date  
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  
 "O" document referring to an oral disclosure, use, exhibition or other means  
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  
 "&" document member of the same patent family

Date of the actual completion of the international search

11 January 2000

Date of mailing of the international search report

20/01/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Patterson, A

# INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

PCT/US 99/20926

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4632842	A	30-12-1986	NONE	
EP 0508136	A	14-10-1992	JP 2820167 B	05-11-1998
			JP 4289273 A	14-10-1992
			JP 4370201 A	22-12-1992
			JP 4366631 A	18-12-1992
			JP 2921533 B	19-07-1999
			JP 6200405 A	19-07-1994
			DE 69225743 D	09-07-1998
			DE 69225743 T	24-09-1998
			KR 9504492 B	01-05-1995
			US 5474839 A	12-12-1995
US 5164252	A	17-11-1992	DE 3939341 A	06-06-1991
			DE 59005615 D	09-06-1994
			EP 0429983 A	05-06-1991
			JP 3172337 A	25-07-1991

# PATENT COOPERATION TREATY

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### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>CM2011/MH</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/US99/20926</b>	International filing date (day/month/year) <b>07/09/1999</b>	Priority date (day/month/year) <b>07/09/1998</b>
International Patent Classification (IPC) or national classification and IPC <b>D06M10/02</b>		
Applicant <b>THE PROCTER &amp; GAMBLE COMPANY et al.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
  
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
 

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand  <b>16/03/2000</b>	Date of completion of this report  <b>09.10.2000</b>
Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div>             European Patent Office              D-80298 Munich              Tel. +49 89 2399 - 0 Tx: 523656 epmu d              Fax: +49 89 2399 - 4465           </div> </div>	Authorized officer  <b>De Waha, R</b>  Telephone No. +49 89 2399 8306



# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US99/20926

## I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

### Description, pages:

1-17 as originally filed

### Claims, No.:

1-7 as received on 19/09/2000 with letter of 19/09/2000

### Drawings, sheets:

1/6-6/6 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US99/20926

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Yes:	Claims	6
	No:	Claims	1-5,7
Inventive step (IS)	Yes:	Claims	
	No:	Claims	6
Industrial applicability (IA)	Yes:	Claims	1-7
	No:	Claims	

### 2. Citations and explanations

see separate sheet

## VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet



**ITEM V**

**Reasoned Statement concerning Novelty, Inventive step and Industrial applicability**

Amended claim 1 of the application relates to a textile article as such which is characterized by

- the product parameter that the static water contact angle (WCA) must be higher than about 120°
- and which includes (lines 2 to 5 of claim 1) a number of process features.

It is unclear at the moment where the amendments of lines 2 to 5 (process features) have been disclosed in the original application. The "continuous process" just as the "energy emitter" cannot be found in the original document ; thus claim 1 would have to be objected to under Articles 19(2) respectively 34(2)b PCT.

Moreover, it must be noted that a prior art - article which has not been produced according to these process features but which fulfills the conditions regarding WCA could fall within the scope of claim 1. The process features could establish novelty of the product only if they would cause the article to have different properties from the products previously described.

**1. Novelty**

EP 0 508 136 (D1) describes a swimsuit cloth which is surface-treated with a fluorocarbon coating; the static water angle is said to be 160° ; the fluorine/carbon ratio is said to be 1.70 (example 3).

From the description, page 3, line 52, it can be clearly derived that the textile article is water permeable. The paragraph bridging pages 5 and 6 discloses a list of applications respectively uses (outdoor garmets, swimwear etc).

Claim 1 of the application, as stated above, is restricted to articles defined by the WCA and certain process features. The coating as such is not defined. It must be concluded that the coatings of D1 (which comprise bridging groups which are not excluded by the scope of the claim of the application) fall within the scope of claim 1. It cannot be seen how the process features (assuming that they would not be considered as added

matter) would impair properties to the article that would allow to distinguish the articles of the invention from those of the prior art.

The subject-matter of claims 1 to 5 and 7 therefore appears to lack novelty (Article 33(2) PCT).

US 4 632 842 (D2) , example 1, describes a flat ribbon fabric coated with fluorocarbon compounds by plasma deposition.

The article is exposed to fluorocarbon compounds in reactor 30, the electrodes 54 being transported by a travelling block along the length of the reactor containing the article, the glow region thereby being moved along the full length of the article to deposit the fluorocarbon coating (Figure 3; col 8, lines 19 to 57).

The F/C-ratio of the articles lies between 1.6 and 1.8 (col 13 line 24); the articles have a WCA of 140° or higher (col 3 line 7). Textiles of this nature are clearly watervapour permeable.

The articles of D2 therefore fall within the scope of claims 1 to 4 which appear to lack novelty.

## **2. Inventive step**

D1 relates to waterproofing respectively hydrophobing textile articles and clothing while maintaining their breathability. A fluorocarbon coating is applied which is tightly bound to the textile article. D1 thus represents the closest prior art for analysing the existence of an inventive step.

The distinguishing feature between the closest prior art of D1 and novel claim 6 lies in use of the article as sun roof for a car or sun blinds. Although the cited prior art does not specifically disclose sunroofs or sunblinds, the use of the known material for the purpose of claim 6 is obvious (regarding that the list of pages 5/6 of D1 automatically leads the skilled person to other applications where the properties of the known textiles are beneficial).

Claim 6 therefore does not involve an inventive step (Article 33(3) PCT).

**VIII. Certain observations**

The claims are confined to articles which have a WCA of a defined value.

The expression "about" renders the scope of the claims unclear.

Moreover, regarding the value and the measurement of the WCA, the latter is carried out on "a plane and smooth surface". It appears that the accuracy of the measurement is depending upon the fact that the surface is "smooth". How can the surface be defined as being smooth ? Which surface is smooth and which one is not ? Where is the borderline. It appears that in absence of a clear and unambiguous measurement procedure, the WCA cannot serve to distinguish the articles of the invention from those of the prior art.

The description on file does not correspond to the claims on file as far as the former relates to subject-matter which is no longer claimed. The description states that the articles may be exposed in the glow or the afterglow region (page 8, lines 29 to 32) whereas the claims are confined to the exposition in the glow region.

Moreover, the description relates to a process where a modulated plasma is used (page 4, last paragraph) whereas the claims do not refer to this preferred embodiment.

Claims

1. A textile article is characterized in that at least part of the surface of said  
5 article is surface treated with a coating and said coating renders a plane and  
smooth treated surface to have a static water contact angle (WCA) higher than  
about 120°, preferably higher than about 130°, most preferably between about  
150° and about 165°.
- 10 2. A textile article according to claim 1 characterized in that said coating is a  
fluorocarbon coating.
3. A textile article according to claim 2 characterized in that said coating  
exhibits a fluorine/carbon ratio (F/C) of between about 1.50 and about 2.00,  
15 preferably between about 1.60 and about 1.95.
4. A textile article according to any of the preceding claims which article is  
water vapour permeable.
- 20 5. A textile article according to claim 4 characterized in that said article is an  
outdoor garment.
6. A textile article according to claims 1 to 3 wherein said article is a sun roof  
for a car or a sun blind or awning.
- 25 7. A textile article according to claims 1 to 3 wherein said article is a swim  
wear article.